

## **REMARKS**

Claims 1-2 are pending in the present application. Claim 3 was previously withdrawn in response to a restriction requirement.

In the present Office Action, the Examiner has rejected claims 1 and 2 as being obvious over Pfefferle (U.S. 4,819,595) in view of Beardsley (U.S. 5,819,774).

Claims 1 and 2 have been amended. No new matter has been added.

Applicant hereby responds to the Examiner's rejections as described below.

### **A. Rejection of Claims 1 and 2 as Obvious over Pfefferle and Beardsley**

In the present Office Action, the Examiner rejected claims 1 and 2 under 35 U.S.C. §103(a) as being obvious over Pfefferle in view of Beardsley.

Applicant respectfully traverses this rejection. To establish a *prima facie* case of obviousness the prior art reference (or references when combined) must teach or suggest all of the claim limitations. MPEP §2142; Velander v. Garner, 348 F.3d 1359, 1363 (Fed. Cir. 2003).

According to the Supreme Court, obviousness should be determined by examining (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, and (3) the level of ordinary skill in the prior art. Graham v. John Deere Co., 383 U.S. 1, 17 (February 21, 1966); see also KSR International, Co. v. Teleflex Inc., et al., 127 S. Ct. 1727 (2007).

The Examiner fails to make a *prima facie* case of obviousness. A prior art reference or combination of such is required to teach or suggest all claim limitations in order to render a claim obvious.

Pfefferle is directed towards a catalytic ignition internal combustion engine, wherein the inner surface 12 of combustion chamber wall 11 is coated with a catalytic coating 14

and a thermal insulating coating 13. Thus, Pfefferle teaches two coatings on the inner surface 12 of combustion chamber wall 11. Pfefferle fails to teach or suggest the single metallic coating, much less the components of the coating as set forth in the pending claims.<sup>1</sup>

Beardsley fails to make up for the deficiencies of Pfefferle to render the presently claimed invention obvious. Beardsley is directed towards the application of a self-lubricating coating and a wear-resistant coating on the valve stem or guide. In particular, Beardsley discloses the self-lubricating coating may be deposited on one of (a) the inner surface of the valve guide, or (b) the outer surface of the valve stem; and the wear-resistant coating is deposited on one of (a) the outer surface of the valve stem when the self-lubricating coating is deposited on the inner surface of the valve guide, or (b) the inner surface of the valve guide when the self-lubricating coating is deposited on the outer surface of the valve stem. See Beardsley, Col. 2, lines 27-35. Accordingly, Beardsley does not disclose any surface of the combustion volume being coated, let alone the portions recited in claims 1 and 2 of the present application. Further, in contrast to the presently claimed invention, Beardsley teaches using two different coatings on the valve guide and valve stem to reduce abrasion. Accordingly, Beardsley fails to make up for the deficiencies of Pfefferle and fails to render the presently claimed invention obvious.

Additionally, there is no motivation to combine the references because Pfefferle teaches a thermal insulating coating and a catalytic coating bonded together, while Beardsley teaches a self-lubricating coating and a separate wear-resistant coating. One of ordinary skill in the art would not look to a reference that teaches a way of preventing friction with a reference

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<sup>1</sup> The Examiner concedes that “Pfefferle does not teach a metallic coating comprising between greater than 15% and about 80% nickel and between about 10% and about 37% chromium.” See Office Action, p. 2.

teaching catalytic and thermal insulating coatings, especially when applied to completely different parts.

Accordingly, Applicant believes that Pfefferle in view of Beardsley fails to render claims 1 or 2, obvious, and accordingly, claims 1 and 2 as currently presented are believed to be in allowable condition.

### **Conclusion**

Applicants respectfully request the issuance of a Notice of Allowance for claims 1 and 2 at the earliest possible time. Applicants further respectfully request the courtesy of a telephone call should there be any outstanding issues related to the issuance of a Notice of Allowance in this matter.

Respectfully submitted,



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